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MISSOURI RIVER BASIN INVESTIGATIONS

LAND PLANNING AND CLASSIFICATION REPORT as Relates to the Public Domain Lands in the KANSAS RIVER DRAINAGE BASIN

Kansas - Nebraska - Colorado

Region III
Billings, Montana
June, 1948

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ACKNOWLEDGEMENTS

Information for this report was gathered from many sources, including bulletins and other published material of the University of Kansas, the Kansas State Agricultural College and the Colorado A & M College. Also certain maps, reports and statistics produced by the Bureau of Agricultural Economics, United States Department of Agriculture; the Bureau of the Census and the Weather Bureau, United States Department of Commerce; the Bureau of Reclamation and the Geological Survey, United States Department of the Interior; and the Kansas State Board of Agriculture were consulted. Public domain status information was taken from the records of the Bureau of Land Management as of May 15, 1948.

Field work consisted of detailed classification of the public domain lands within the area, and the assembly of data relevant to matters of land use and the proposed irrigation development of the basin in relation to these public domain lands. Elmer D. Hunter, Agricultural Engineer, and John Q. Peterson, Range Examiner, performed the field work during April and May, 1948. Mr. Peterson analyzed the material and prepared the report. Drafting was under the supervision of William C. Anderson, Engineering Draftsman, and the project in all its aspects was under the direction of Robert D. Nielson, Land Economist in Charge, Missouri Basin Investigations, Bureau of Land Management.

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SUMMARY

The Kansas River Drainage Basin extends from northeastern Colorado to the Missouri River, and covers a total area of about 61,500 square miles in Kansas, Nebraska and Colorado. Most of the land in this basin is in private ownership, but some 3,800 acres of public domain land in small, isolated tracts, are scattered over the western two-thirds of the area. Owing to its small acreage and relatively low economic value, this public domain land has no significant place in the land use picture of the area.

The area is well developed agriculturally. Approximately two-thirds of it is suitable for permanent cultivation, the principal crops being hard winter wheat, corn, grain sorghums and forage. For the most part, the soil is fertile and well drained. Much of the land is susceptible to both wind and water erosion. Flood damage following heavy rainfall is of frequent occurrence in the basin. Annual precipitation ranges between 16 and 34 inches.

Highly mechanized farming operations in the western part of the basin during recent years have tended to increase the acreage per unit of management, and this may in part account for the recent downward trend of population in the rural areas. Most of the industrial activity is associated with agriculture and its many related aspects. The area includes a sizable portion of the nation's hard winter wheat belt.

GENERAL DESCRIPTION

This report covers the entire Kansas River Drainage Basin. The basin area extends between the Missouri River and the plains of northeastern Colorado, and involves about 12 percent of the Missouri Basin drainage area above Kansas City. Its gross area is about 61,500 square miles, 27,400 square miles of which are in Kansas, 24,700 square miles in Nebraska, and 9,400 square miles in Colorado.

Nearly 85 percent of the basin area lies west of the 97th meridian, which is generally accepted as the line of demarcation between the semi-arid zone and the more humid regions of the east.

The Kansas River is formed by the Republican and Smoky Hill Rivers which come together at Junction City, Kansas. From Junction City, , the Kansas flows generally eastward 170 miles to join the Missouri River at Kansas City. These two principal tributaries of the Kansas River, together with the Big Blue and the Delaware Rivers, account for about 92 percent of its total drainage area. These main tributaries drain 19,970, 25,390, 9,600 and 1,140 square miles respectively. The area is well drained, is rather closely held in private ownership, and is rich in agricultural production. It embraces no large lakes, mountains or other outstanding topographic features. Its population is predominantly rural. The greatest density of urban population is along the Missouri River, Kansas City being the largest city and principal trading center. Part of the basin is within the hard winter wheat belt, but it is also important as a producer of livestock, petroleum, salt and building materials.

PHYSICAL FACTORS

Physiographic Features

The area is situated entirely within the Great Plains Province, and is part of the west central geographic division of the United States. That part covered by the Big Blue and Delaware Rivers consists primarily of Loess hills and certain limestone uplands, the most conspicuous of which is the Flint Hills region of eastern Kansas. Other prominent physical features include the Osage Plains, the Smoky Hills upland, dune sand areas of southwest Nebraska and northeast Colorado, and the High Plains comprising approximately the west half of the basin. Numerous eastward-flowing streams have carved narrow valleys of moderate slope, but these are often faced by steep bluffs which separate the level uplands from the stream channels.

Areal Geology

Formations of five principal geological systems or eras are exposed at various places in the basin. These are the Pennsylvanian, the Permian, the Cretaceous, the Tertiary, and the Quaternary.

The Ogallala formation of the Tertiary period covers the High Plains area and consists predominantly of sand which has been deposited by erosion from the Rocky Mountain area and is now largely overlain by the Loess deposits. This formation disappears in central Kansas. The Smoky Hills upland and the Blue Hills upland of central Kansas are formed by Cretaceous rocks. The Loess-covered Pennsylvanian of the eastern part contains important coal deposits.

Topography

The entire basin is predominantly plains type country over which the relief has been created by water and wind erosion. Descending from a maximum elevation of about 5,500 feet in northeastern Colorado to 750 feet at Kansas City, the surface presents a generally level topography cut by numerous easterly-flowing streams, yet the weathering of softer materials in some places and resistance to weathering of harder rock elsewhere, has resulted in a series of rounded low hills, great expanses of level terrain, steep-sided bluffs, broad, flat river flood plains and sand dune areas, the latter being the result of wind action, mainly.

Drainage Pattern

The numerous streams which make up the Kansas River drainage system are rain-fed for the most part. They do not depend on snow melt, and hence their volume fluctuates widely. Except for the eastern one-third of the basin area, all principal drainages flow in a generally eastward direction from sources in northeastern Colorado, western Kansas and Nebraska. The Big Blue River rising in southeastern Nebraska, and the Delaware River which rises in northeast Kansas, flow generally southward into the Kansas River and drain a total of about 10,740 square miles in the so-called humid section of the basin. The drainage systems of the Republican and Smoky Hill Rivers form a huge ellipse within parts of three states between Junction City and the high plains of Colorado. Each of these rivers is fed by supplemental streams of greater or less importance. Owing to the erratic rainfall, a characteristic of the area, streamflow varies widely. Flash floods are of common occurrence. Major floods, such as the 1915, 1935 and 1947 floods of the Republican River, have focused the need for soil and water conservation in the area.

Climate

The basin has three distinct climates--eastern, middle and western. The eastern third has an average annual precipitation of 28 to 34 inches. The middle section extends westward approximately to the 100th meridian and receives an average annual precipitation of 20 to 28 inches. From here westward, the average annual precipitation ranges between 16 and 20 inches. The average temperature over the basin as a whole is about 54 degrees F.

Throughout the basin, there have been alternately recurring wet and dry periods, with no regularity in length or time of occurrence, and no clues to suggest when either may occur again in the future. Records indicate plainly that a period of dry years like that from 1930 to 1940 is alternately followed by a period of normal or above normal precipitation, and later by another dry period. The driest months are January and December; the wettest, May and June. Over the area as a whole, between 70 and 77 percent of the annual precipitation is received during the frost-free period. Often the rainfall is of torrential nature, resulting in heavy runoff, stream overflow, soil and water losses and damage to structures and improvements of all kinds. Examples of weather conditions as they relate to the agricultural situation in the area are shown by the following tabulation:

Rainfall and Growing Season Data at Selected Weather Bureau Stations in the Kansas River Basin

Station	Drainage	Years of Record	Average Precipitation	Average Growing Season
Beatrice, Nebraska	Blue	39	27.80 in.	168 days
Benkleman, Nebraska	Republican	16	18.59 in.	153 days
McCook, Nebraska	Republican	32	19.50 in.	156 days
Akron, Colorado	Republican	33	17.91 in.	143 days
Topeka, Kansas	Kansas	63	32.55 in.	193 days
Hays, Kansas	Smoky Hill	45	22.62 in.	168 days
Tribune, Kansas	Smoky Hill	33	15.84 in.	162 days

Weather Bureau data covering long periods of record emphasize the importance that is attached to climate by the people of the area. Farmers, of course, are most directly concerned. The success or failure of their work in a given area is often dictated by the vagaries of climate. As one farmer put it, "In making ready for the harvest, you may have no use for the combine an hour after completion of these preparations, for a sudden hail storm can eliminate the need of the machinery that particular year". Despite the hazards of a continental climate, the weather in this basin is "spotty", and complete crop failure over a sizable area is rare. Capricious elements of weather in the area, in addition to hail, include also hot winds, drought periods of long duration and wide extremes in temperature and precipitation.

Vegetation

Native forage plants of the basin consist mainly of plains and prairie grasses and grass-like plants. In the eastern part, tall grasses prevail, of which big and little bluestem are dominant. Prairie type grasses and various species of mid grass types occur in the dune sand sections in the western part. The broad, level central plains and high plains of the west present an almost uniform buffalo grass sod. Associated with buffalo grass are many other grasses of high forage value. These include western wheat grass, grama grass, prairie triple-awn, needle grass and various grasses of lesser prominence. Sand dropseed, sand reedgrass, blue grama, sand hill blue-stem, June-grass and hairy grama are predominant species of the dune sand section. Matchweed, pasture sage, prickley pear and soapweed are among the less desirable plants found in the area. These are most prevalent in areas that have been disturbed by the plow or overgrazing, or sheet erosion.

Soils

The soils of the Kansas River Drainage Basin have been subdivided into many types and series. For the immediate purposes of this report, they may be placed in two broad classifications; namely, hardlands and sandhills. In general, the "hard" lands range in texture from fine and silty loam to silty clay and clay loams. The short grass sod lands are relatively free from rock, and are usually rich in organic matter. Soil survey reports of the area describe many types according to consistency, profile, and a number of related factors, which denote some feature of a locality or situation in which similar characteristics prevail.

For example, the report for Clay County, Kansas, lists 23 soil types ranging from Hall silty clay to dune sand. These are placed in three main groups on the basis of their relative stage of development: (1) Soils having well-developed profiles or having the greatest possible number of layers for

this climatic region and regarded as mature; (2) soils having only moderately well-developed profiles; and (3) soils in which the layers are only indistinctly developed or lacking.

Immature soils throughout the basin usually occur on slopes where erosion has removed the surface soil almost as rapidly as it formed and on flood plains of streams where the recently deposited alluvium has not fully developed. In this category also are the dune sand areas. With these exceptions, the soils of the basin are friable and fertile except where impregnated with gravel or gypsum.

To mention a few of the soils series occupying level to gently rolling plain and prairie areas of the so-called "hard" land types, there are the Holdridge, Dawes, Rosebud, Kieth, Hall, Crawford and Colby series. These are in turn broken down into many subdivisions. Sandy and sandhills soils fall mainly into the dune sand, Valentine, Dwyer and Sarpy series.

Much of the land of the basin is subject to both wind and water erosion. Vulnerability of the grassland to erosion depends primarily on the extent of the vegetative cover. The land under cultivation varies widely in its susceptibility to wind erosion, depending primarily on relief, degree of protection, methods of cultivation and many other factors. On the sandhill areas, many "blowout" spots occur near watering places and in areas where the native vegetation has been unwisely disturbed by plowing or overgrazing.

ECONOMIC AND SOCIAL FACTORS

Settlement and Population

The greatest impetus to permanent settlement within the area was furnished by the homestead law of 1862. Other influences, such as westward extension of railroads, the great cattle drives and the cattle boom which swept over the Plains during this period, and the general unrest in the aftermath of the Civil War, all added to the impact of the homestead law. By 1885, much of the desirable land had passed into private hands. Urban growth centered mainly along the Missouri River where rail and water facilities furnished the outlet for an ever-expanding agricultural production.

The estimated population of the basin is about one and one-half million, with less than one-third of the inhabitants residing in the Smoky Hill and Republican basins. In the Republican River drainage area, for example, there are only seven towns of 2,500 inhabitants or more. The population of this basin in 1940 was 223,967, a decrease of 31,830 from that of 1930. During the period 1910 to 1930, there were small decreases in rural population, and

from 1930 to 1940, this decrease was even greater. At the same time, urban populations in the basin were steady or slightly increasing. A similar pattern of population trends occurred in the Smoky Hill Basin, while in the eastern part, particularly in proximity to the Missouri River, urban populations increased. During this time also, the size of farms trended upward in these two important segments of the Kansas River Drainage System. As a general rule, the population densities decrease, and the size of farms increase as you go west over the basin from the Missouri River.

Area Economy

Since 1940, the yields of farm crops have been considerably better than for the preceding ten years, and prices have been higher. Farmers have been making a fair to good profit since the beginning of the war, and most of them have accumulated working capital and have become very well established. From Junction City westward, income derived from farm production accounts for nine-tenths or more of the total income of the people in that area.

Much of the "wheat boom" land in the western part of the basin is in absentee ownership, and the trend is toward larger acreages under one management. The use of large scale mechanized farming equipment, the favorable prices and rainfall during recent years have been instrumental in the downward trends of rural population as well as in the additional acreage of buffalo grass sod plowed up each year. Long-time resident farmers are concerned about what might happen should dust bowl conditions return to the area. They wonder whether, in case of prolonged drought, the absentee owners would leave their machinery in the shed and let the resident farmer take the consequences.

Industry is predominantly associated with agriculture, but petroleum and mining are gaining in importance. During recent years, oil has been found in Phillips, Graham, Trego, Ellis, Russell, Rush, Barton, Ellsworth, Rice and McPherson Counties, Kansas. Part of the area in Kansas also is underlain by salt deposits. Building materials, which are found in abundance, include limestone, sandstone, chalk, gypsum, volcanic ash, sand, gravel and structural clays.

Public Facilities

The area is serviced by four transcontinental railroad systems, (the Missouri Pacific, Union Pacific, C. R. I. and P., and A. T. and S. F.) numerous improved highways, main and feeder routes for air transportation, and a network of telephone facilities. Principal trade and transportation centers are Kansas City and Omaha. A considerable portion of the industrial development is based upon grain and livestock production in the basin,

although mining and comparatively recent discovery of oil and gas (in Kansas) are gaining in importance.

CLASSIFICATION OF THE PUBLIC DOMAIN

One of the requisites for a comprehensive land use plan in this drainage basin is an up-to-date classification of the public domain, primarily to (1) determine the physical and economic position of these lands in relation to the proposed development programs in the area; (2) provide an inventory and appraisal of the public domain resources as a guide to the proper use of these lands, and (3) devise a program for appropriate disposition of these lands under applicable law.

Field examination of the public domain lands of the Kansas River Drainage Basin was completed in May, 1948. Details concerning the physical and economic characteristics of each tract are reported on Form 4-1090. Among other things, these reports give specific information on soil, vegetation, topography, productive capacity, present condition, value and highest use capabilities of the land. The extent and nature of public interest in the land are also reported. These reports are filed in the regional office for administrative reference.

The public domain of this basin totals only 3,823 acres. It is scattered in small tracts that are isolated by privately owned lands, with the exception of one tract which is surrounded by State lands. Of the total public domain acreage, only 360 acres are under grazing lease. Applications have been made for the purchase of isolated tracts involving an additional 645 acres. Two small fractional areas totaling 2.16 acres have been washed away by river bank erosion.

Primarily, the public domain is suitable only for grazing. Most of it is non-tillable because of its topography or its soil conditions. It contains no timber or surface mineral and embraces no springs or other water needed by the public. It consists of 74 separate tracts averaging 52 acres each, the smallest being less than one acre in area and the largest 160 acres. There is no part of it that can be developed or utilized as an independent unit for either grazing or farming, but it can be used and operated successfully in connection with adjacent lands. By the same token, the public domain in this basin can exert no important influence on the irrigation and flood-control programs of the area. There appears to be no feasible means whereby the public domain can be consolidated by exchange. For the most part, these tracts are enclosed within boundary fences of adjacent ranches. There is no feasible manner by which the Bureau of Land Management or any other Federal agency can administer these scattered tracts effectively.

The land is used mainly for summer grazing. Its average grazing capacity is estimated to be 1.42 acres to the animal unit month. On the basis of appraisal methods used, its estimated present worth is about $19,000, or an average of about $5.00 an acre. In accordance with established rates to be charged as rental for the use of public domain grazing lands hereafter leased under Section 15 of the Taylor Grazing Act. the annual income from these lands would be expected to be only about $285.00. That many of the local people are not fully informed as to the sale and lease provisions of the Taylor Act involving public lands outside grazing districts is shown by the fact that only about 350 acres are leased, and only eleven of the owners of land adjacent to certain public domain tracts had filed public sale applications as of May 15, 1948.

A study of the possible effect that reclamation projects may have on the public domain in the basin reveals the following pertinent points:

1. There is no public domain that can be irrigated under any of the projects.

2. There is no public domain that will be flooded by impounded water behind any of the proposed dams.

3. There is one tract of public domain that is surrounded by private land which may be purchased or condemned by the Bureau of Reclamation in connection with the Bonny project on the South Republican River.

Some 2,896 acres of public domain are within the defined drainage areas of proposed reclamation dams within the Smoky Hill and Republican River drainage basins. The amount of public domain within the drainage area of each of these dams, and the relatively small importance of the public domain to these projects, is shown by the following tabulation:

Project	Defined Drainage above Dam Site	Public Domain within Defined Drainage
Wray	25,600 acres	114.62 acres
Wilson	1,254,400 acres	40.00 acres
Bonny	1,122,800 acres	593.76 acres
Pioneer	929,280 acres	440.00 acres
Cedar Bluff	3,392,000 acres	537.76 acres
Beaver City	1,203,200 acres	102.76 acres
Red Willow	189,440 acres	152.73 acres
Culbertson	3,522,560 acres	913.95 acres
Total	11,539,280 acres	2,895.58 acres

About 912 acres of the total public domain area in the basin is within the dune sand area of northeastern Colorado where no defined drainage has been established. Fractional areas totalling 15.77 acres are within the Blue River drainage in the eastern part of the Kansas River Basin.

With reference to item 3 above, the following facts are set forth:

This tract is described as Lots 12 and 13, Section 14, T. 5 S., R. 44 W., 6th P.M., Colorado. It contains 53.78 acres, and is located about 5 miles west of the proposed Bonny dam site. It lies at an elevation of about 3,800 feet and is surrounded by land owned by Marie M. Boden Hoag. Mrs. Hoag's home and farm land are located in the southeast quarter of Section 14, approximately in the flood plain of the South Republican River, or between 50 and 100 feet lower than Lots 12 and 13. Other lands belonging to the Hoag ranch are rolling to rough grazing lands which adjoin said lots on the south, east and north, all within Section 14. Information available indicates that all of the land now owned by Mrs. Hoag in Section 14 will be included in the condemnation sale, even though it is obvious that the only lands in her present ownership that can possibly be flooded by impounded waters above Bonny Dam are the level lands in the southeast quarter of Section 14. In view of this situation, it would seem to be in the best public interest to retain Lots 12 and 13 in Federal ownership. Presumably the Bureau of Reclamation will eventually lease its non-flooded lands in this vicinity for grazing. In such event, the lessee of surrounding lands would be entitled to a lease in Lots 12 and 13.

One other tract of public domain in the basin offers an exception to the general rule. This tract is described as the NE$\frac{1}{4}$ Section 22, T. 1 S., R. 49 W., 6th P.M., Colorado. It is not leased. It is surrounded by land owned by the State of Colorado. The said State lands are held under lease by one individual. Concerning this tract of public domain, it may be that an exchange of lands can be worked out with the Colorado State Land Board whereby both the State and the Federal Government would benefit.

If it is determined that there is no such interest on the part of the State concerning this tract, it would seem proper to expose it for sale, along with similar lands in the area.

RECOMMENDATIONS

Section 14 of the Taylor Act provides in part:

> "Section 14. That Section 2455 of the Revised statutes, as amended, is amended to read as follows: Section 2455. Notwithstanding the provisions of Section 2357 of the Revised Statutes (U.S.C. title 43, Sec. 678) and of the Act of August 30, 1890 (26 Stat. 391), it shall be lawful for the Secretary of the Interior to order into market and sell at public auction at the

land office of the district in which the land is situated, for not less than the appraised value, any isolated or disconnected tract or parcel of the public domain not exceeding seven hundred and sixty acres* which, in his judgment, it would be proper to expose for sale after at least thirty days' notice by the land office of the district in which such land may be situated."

In consideration of all circumstances surrounding the public domain lands of the Kansas River Drainage Basin, it is believed that it would be in the best interests of all concerned if these lands were transferred to private ownership at an early date. The majority of those who own property adjoining these lands would like to acquire them by purchase. Despite the fact that the public domain has been subject to disposition by grazing lease or sale for many years, less than 10 percent of it is leased under Section 15 of the Taylor Grazing Act of 1934. Yet there is evidence that "free use" is made of the unleased lands each year, and that the user is fully aware of the fact that the land is public domain. Many of the interested land owners were surprised to learn that there are ways and means of obtaining legal use or ownership of small tracts of the public domain in this area.

Under Bureau of Land Management Circular No. 1666, approved November 19, 1947, the Director may authorize the offering of an isolated tract for sale either upon application or on his own motion.

In view of the foregoing, it is recommended that steps be taken to dispose of all the lands described below at public sale. To accomplish this with the least expense in time and money, it is suggested that the Bureau of Land Management initiate a sale program within this basin, instead of awaiting arrival of individual applications. Steps necessary in furtherance of such a program would include:

1. Publication of news releases giving advance and detailed information on the impending sale of the lands.

2. Issuance of individual notices to owners of adjacent lands. (Names and addresses of owners of adjacent lands are on file in the regional office.) These notices, as well as the news releases would contain all the essential information such as description of the lands to be sold, place and date of sale, and the appraised value of the land.

3. Provision for holding the sales in localities convenient to the interested parties in accordance with schedules to be included in the notices.

4. Cancellation of present grazing leases in the area.

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* Recent legislation increased this acreage to 1,520.

A description of public domain in the Kansas River Drainage Basin that is classified suitable for public sale is set forth below:

List of Public Domain Lands Classified as Suitable for Public Sale Kansas River Drainage Basin

State of Kansas - 6th P.M.

Twp.	Rge.	Sec.	Sub. Div.	Acres	Appraised Value Per Acre
1 S.	29 W.	1	SW¼ SE¼ (2)	40.00	$ 4.00
1 S.	40 W.	10	SW¼ NW¼ (1)	40.00	2.50
1 S.	41 W.	4	NW¼ SE¼	40.00	4.00
1 S.	41 W.	14	SW¼ NE¼	40.00	4.50
5 S.	42 W.	5	Lots 1 & 2	9.10	5.00
5 S.	42 W.	8	Lots 1 & 2) (1)	7.28	5.00
5 S.	42 W.	17	Lots 1 & 2) (1)		
11 S.	20 W.	22	SE¼ SW¼	40.00	5.00
11 S.	40 W.	18	Lot 2 (1)	36.99	15.00
13 S.	38 W.	35	Lot 3 (1)	26.75	15.00
13 S.	42 W.	28	NW¼ NW¼ (1)	40.00	6.00
15 S.	26 W.	20	NE¼ SE¼ (2)	40.00	3.50
15 S.	26 W.	21	W½ NW¼)		
			NW¼ NW¼) (2)	120.00	3.50
15 S.	28 W.	31	NW¼ NE¼ (1)	40.00	4.00
15 S.	28 W.	32	NE¼ NW¼		
			SE¼ SW¼	80.00	4.00
7 S.	6 E.	35	Lot 1	.80	12.50

State of Nebraska - 6th P.M.

Twp.	Rge.	Sec.	Sub. Div.	Acres	Appraised Value Per Acre
4 N.	30 W.	4	Lot 3 & 4)		
		5	Lot 1 & 2)	152.73	5.00

State of Colorado - 6th P.M.

Twp.	Rge.	Sec.	Sub. Div.	Acres	Appraised Value Per Acre
1 N.	42 W.	15	SW¼ SW¼	44.40	5.00
3 N.	43 W.	14	SW¼ NE¼	40.00	5.00
		23	NW¼ NE¼ (2)	40.00	5.00
		24	NE¼ NE¼	40.00	5.00
		25	NE¼ SE¼	40.00	5.00
3 N.	44 W.	35	NW¼ SW¼ (1)	40.00	5.00

State of Colorado - 6th P.M. (Continued)

Twp.	Rge.	Sec.	Sub. Div.	Acres	Appraised Value Per Acre
5 N.	44 W.	20	SE¼ NW¼	40.00	5.00
3 N.	45 W.	8	NE¼ NW¼	40.00	5.00
4 N.	45 W.	4	Lot 2 (1)	53.17	5.00
			SW¼ NE¼ (1)	40.00	5.00
			SW¼ NW¼ (1)	40.00	5.00
			NW¼ SE¼ (1)	40.00	5.00
			S½ SE¼ (1)	80.00	5.00
5 N.	45 W.	7	SW¼ SE¼	40.00	4.00
		9	SE¼ SE¼	40.00	6.00
		18	NW¼ NE¼	40.00	4.00
			SE¼ NE¼	40.00	4.00
2 N.	45 W.	18	Lot 1		
			NE¼ NW¼	74.62	2.00
2 N.	46 W.	12	NW¼ SW¼	40.00	5.00
5 S.	42 W.	15	SW¼ NW¼	40.00	5.00
12 S.	42 W.	2	Lot 8 (1)	40.69	5.00
			Lot 20	40.76	10.00
		10	NE¼ NW¼	47.54	7.50
2 S.	43 W.	21	N½ NW¼	80.00	5.00
			SE¼ NW¼	40.00	5.00
		35	SW¼ NW¼	40.00	3.00
2 S.	44 W.	11	NE¼ SE¼	40.00	5.00
		12	NW¼ SW¼	40.00	5.00
		14	NE¼ NW¼	40.00	5.00
3 S.	44 W.	9	NE¼ SE¼	40.00	5.00
5 S.	44 W.	3	SW¼ NW¼	40.00	5.00
5½S.	44 W.	31	Lot 1 (2)	30.46	5.00
		32	SE¼ SW¼	40.00	5.00
6 S.	44 W.	14	SE¼ SE¼	40.00	5.00
		23	NE¼ NE¼	40.00	5.00
11 S.	44 W.	5	Lot 3	22.76	5.00
5 S.	45 W.	27	W½ SW¼	80.00	4.00
		31	Lot 14	40.00	4.00
		32	NW¼ NE¼	40.00	4.00
			SW¼ SW¼	40.00	4.00
5½ S.	45 W.	35	Lot 5	38.01	5.00
10 S.	45 W.	5	SE¼ SW¼	40.00	5.00
1 S.	46 W.	27	NE¼ SW¼	40.00	5.00
2 S.	46 W.	5	NW¼ SE¼	40.00	5.00
		10	NW¼ NW¼ (1)	40.00	5.00
			S½ NW¼ (1)	80.00	5.00

State of Colorado - 6th P.M. (Continued)

Twp.	Rge.	Sec.	Sub. Div.	Acres	Appraised Value Per Acre
3 S.	45 W.	5	S½ NW¼ (2)	80.00	5.00
2 S.	47 W.	21	SE¼ NW¼	40.00	5.00
		27	NE¼ SW¼	40.00	5.00
		28	NW¼ SW¼	40.00	5.00
4 S.	47 W.	1	SE¼ SE¼	40.00	5.00
6 S.	47 W.	18	W½ NW¼	80.00	5.00
1 S.	48 W.	17	SW¼ NE¼	40.00	5.00
			NW¼ NW¼	40.00	5.00
11 S.	48 W.	7	Lot 3	31.49	5.00
			Lot 4	31.51	5.00
2 S.	49 W.	17	NW¼ SW¼	40.00	5.00
		30	NE¼ NW¼	40.00	5.00
2 S.	50 W.	25	SW¼ SE¼	40.00	5.00
3 S.	50 W.	15	N½ NE¼	80.00	5.00
		21	SW¼ NW¼	40.00	5.00
		23	SE¼ NW¼	40.00	5.00
			E½ SW¼	80.00	5.00

List of Public Domain Lands to be Retained in Federal Ownership at this Time

The following described land should be withheld from sale pending consideration as noted in regard to each tract:

T. 5 S., R. 44 W., Sec. 14, Lots 12, 13 - 53.78 acres; appraised value, $5.00 per acre. This tract is within a ranch which may be included in the purchase program of the Bureau of Reclamation.

T. 1 S., R. 49 W., Sec. 22, NE¼ - 160 acres; appraised value, $5.00 an acre. This tract is surrounded by State land. The interest of the State Land Board of Colorado should be ascertained before offering the land at public sale.

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(1) Isolated Tract Application Pending
(2) Grazing Lease Pending or in Effect

RECAPITULATION

Total public domain in grazing lease	350.46 acres
Total public domain in ITA pending	644.88 acres
Total public domain above described	3,822.94 acres
Total appraised value - 1948	$ 19,114.70

Submitted June, 1948

John Q. Peterson

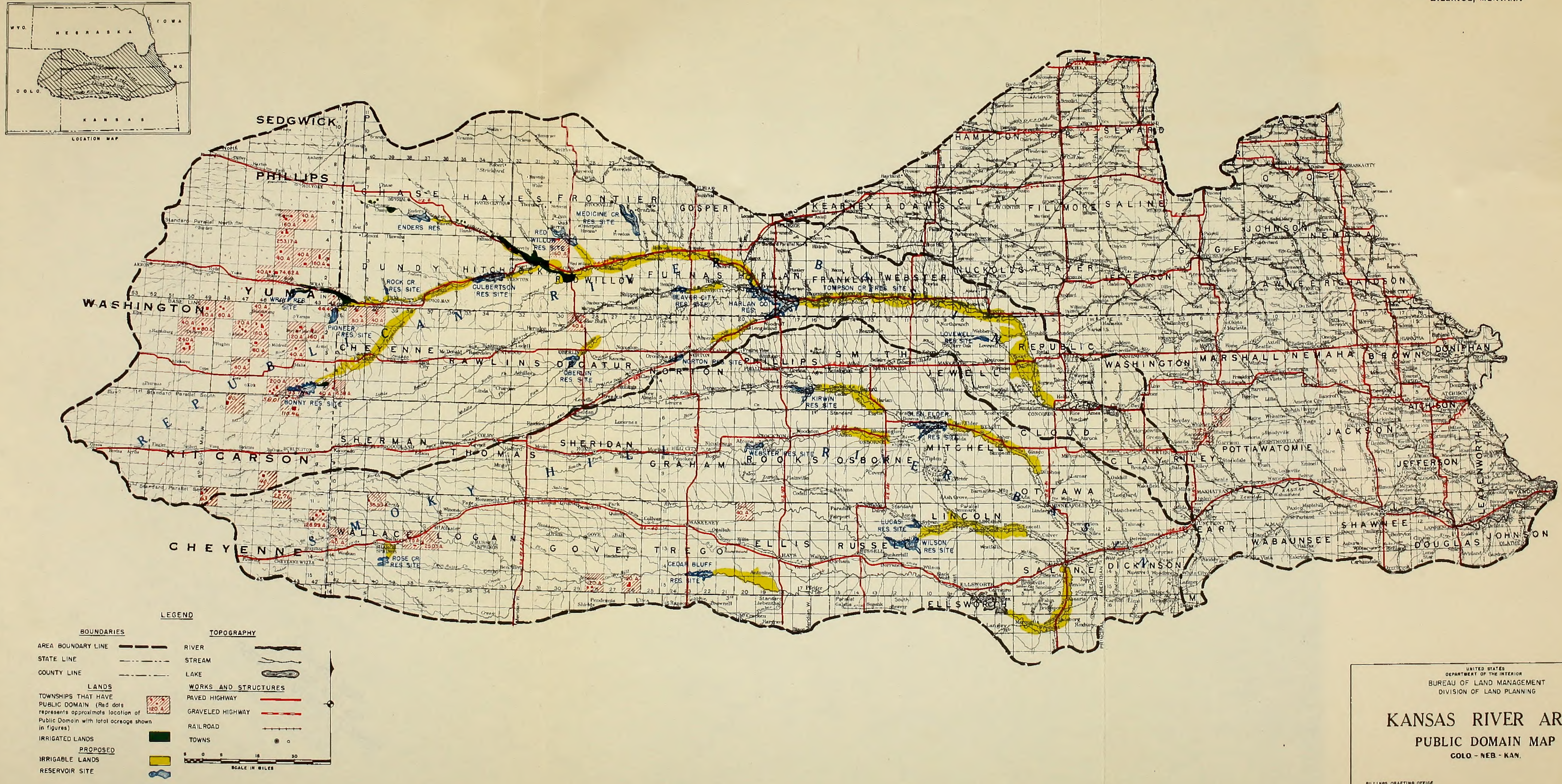
John Q. Peterson,
Range Examiner.

Approved:

R.D. Nielson

R. D. Nielson, Chief,
Division of Planning.

MISSOURI RIVER BASIN INVESTIGATIONS
BILLINGS, MONTANA



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF LAND PLANNING

KANSAS RIVER AREA
PUBLIC DOMAIN MAP
COLO. - NEB. - KAN.

BILLINGS DRAFTING OFFICE

JUNE 1949

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